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X.—*On the Method of Measurements, as a Diagnostic Means of distinguishing Human Races, adopted by Drs. Scherzer and Schwarz in the Austrian Circumnavigatory Expedition of the "Novara".* By JOSEPH BARNARD DAVIS, Esq.

WEIGHT and measure have been very frequently applied as means to determine the physical proportions of different human races, and to ascertain their essential diversities. But it may well be doubted whether they have ever been employed in that systematic and comprehensive manner which will afford the results they are capable of yielding. Travellers have generally contented themselves with speaking in indefinite comparative terms of the people with whom they have come into contact. But few have submitted any considerable number of these people to the test of measurement, and thus ascertained their dimensions. Anthropology stands in need of many more accurate and extended observations to derive the full results from these sources of knowledge.

The subject itself is a large one, and some have confined themselves to one branch of it, some to others. Where actual measurements have been carried out, many have contented themselves with taking the *stature* of a few or a number of the people; others have besides ascertained the lengths of the limbs; and a few have subjected the head to a series of superficial measurements.

As we are fully assured that this latter division of the body is the seat of those faculties which lie at the base of all the peculiarities of human races, bearing essentially and intimately upon their manners and customs, all their institutions, their religious impulses, their degree of civilizability, and the development to which it has attained, it is not surprising that it should have attracted the chiefest attention. Besides the superficial measurements of the head, a more extensive series of observations has been made upon the bony skull itself, with a view of determining its relative proportions, for comparison in the same race or amongst different races.

Many observers, advancing a step nearer, have endeavoured to ascertain, by measure and by weight, the *internal capacity* of this marble palace. And, lastly, some have laboriously devoted their inquiries to the great central mass of the nervous system, and availed themselves of the opportunities that have occurred to them to determine the size and the weight of the brain and its different parts. As this last investigation comes nearest of all to the specialities of human beings, who are so finely discriminated by Professor Owen as *Archencephala*, it is to be regretted that the occasions for research among distinct

racés are so few, and have been so little availed of, and the investigation itself is so elaborate and nice, that hitherto this most interesting part of anthropological anatomy is, as it were, a *tabula rasa*, to use the language of one of the most laborious inquirers in this branch of science, Professor Huschke, of the University of Jena.

It is, however, fortunate that gauging the internal capacity of the skull should afford the means of so accurate an approximation to the volume and the weight of the brain; and thus for the comparison of these important points among the different families and tribes of men.

Hence the labours of Tiedemann, the distinguished physiologist, who, with a very amiable design, undertook to show that the brain of the Negro was not smaller than that of the European—an attempt similar to that of the late Sir William Hamilton. Tiedemann might have succeeded in impressing us with his own conclusion, had he not published the Tables on which this conclusion was based, and which themselves refute such an erroneous opinion. To Tiedemann succeeded Professor Morton, of Philadelphia, and others. Among the most recent is Professor Huschke, of Jena, one of whose results of his estimation of the capacity of the skull and of the size of the brain, is, that the Germanic races, among whom through our Anglo-Saxon forefathers we rank as one great branch, have the largest brains of any people. They distinctly exceed the French in this respect.

That great diversities, capable of metrical appreciation, prevail among human races, is very well known. Some of the tribes of North American Indians are remarkable for their great stature. Catlin assures us that the men among the *Crows*, whose hair will frequently reach the calves of their legs, are most of them six feet or more. Other tribes are of a decidedly lower stature. Of the gigantic Patagonians of South America, the most extravagant accounts have been given by travellers. But Captain King affirms them, upon measurement, to be from five feet ten inches to six feet high, which is supported by the statement of M. D'Orbigny, that some are six feet three and a half inches, and that the medium stature is above five feet eight inches English. On the contrary, the average height of the Bushman is only four feet four inches. And, in the recent visits to the Andaman Islands, the inhabitants are spoken of as "dwarf Negrillos" and as "men of middle size," but an individual, who was measured, gave a stature of four feet nine inches and a half.* This gives a range of very nearly two feet

* Selections from the *Records of the Government of India*. No. xxv, 1859.

between the tallest and the least races of men we are acquainted with. And within these, at least twenty inches, are comprised the other races of mankind. Some, like some tribes of the Negritos, averaging about four feet eight inches. Others, as the so-called Malay races, ascending to a mean of five feet three inches. But among the Negrito tribes of the Pacific themselves there is, as that eminent ethnologist, Mr. Crawford, has clearly shown, a great diversity of stature. They dwell in islands scattered over a large extent of ocean, and although some tribes do not reach five feet in height, others, as those of New Caledonia, attain to six feet, and individuals among them even more. Thus, in stature alone, a very great diversity prevails. And it is remarkable that tribes in close proximity to each other, frequently exhibit startling contrasts. Dr. Livingstone, whose opportunities were so extraordinary, had he been an ethnologist, observed in the plains of the interior of Southern Africa, scattered among the Kafirs, who are a tall, fine and robust race, the hordes of the diminutive Bushmen. He was deeply impressed with what he saw, so contrary to all his preconceptions; and expresses his great surprise that such dissimilar races should be everywhere scattered about the country, without being mingled, where they have dwelt for unlimited ages, exposed to all the same influences of air, climate, food, &c. The tall Patagonians, and some tribes of Fuegians, distinguished for their dwarf stature, afford a similar example of contrast.

The brothers Schlagintweit, following in the train of Mr. Hodgson, the learned philologist of the sub-Himálayan races, carried on an extensive series of metrical observations on the tribes of the Himalaya and of India. Many curious results, chiefly pointing to the different proportions of parts of the bodies and limbs of these people from those of Europeans, have been attained, which will be published in the ethnological portion of their projected work. After ascertaining the weight of the individual and his strength, by means of the dynamometer, they made from twenty-five to twenty-eight different measurements, chiefly of the head and of other parts of the body and limbs. But Drs. Scherzer and Schwarz have striven, by a more complex and complete system of observation and measurement, to gain an image of the size and form of the individual and of all his parts. Thus, not merely to subserve the purposes of the anatomist, the physiologist and the ethnologist, but those of the artist also. Their more ambitious object of obtaining, in this way, to a natural classification of human races, is an evidence of laudable zeal; but we can hardly hope that their labours can do more than contribute

towards the solution of this difficult problem, although it ought to be mentioned that the late Baron Al. von Humboldt, a short time before his death, expressed his great satisfaction with the system of measurements of Drs. Scherzer and Schwarz, by which, he thought, we may at length arrive at a safer result in distinguishing and determining human races than by any other means.

After recording the age, weight, height, strength, colour of the hair and eyes, and number of the pulsations of the radial artery, they divide their measurements into three sections, those of the *head*, the *trunk*, and the *extremities*; and of these they take no less than seventy different dimensions in all, by means of different instruments. Their external measurements of the head are the most complete that have ever been employed. They embrace the face as well as other parts of the head, and by means of a perpendicular line with plummet, and a small metre-scale, they are able to ascertain pretty correctly the profile of the countenance. The number of their different measurements of and about the *head*, consisting of superficial distances, diameters, circumferences, &c., amounts to thirty-one, those of the *trunk* to eighteen, and those of the *extremities* to twenty-one. When the frigate *Novara* reached Sydney, these gentlemen printed an account of their system of measurements "for private circulation" among men of science, which is preceded by a number of ingenious observations. In these they dwell upon the ease with which travellers intuitively discriminate the different nations and tribes of mankind; and yet the difficulty in some selected individuals, especially when the eye is deceived by a substitution of dress; and express great confidence in a more minute examination by a systematic method of measurements. They insist, with equal confidence, that nature must recognise a definite plan by which man's different types are formed and distinguished; and conclude that we should dedicate the same amount of study and inquiry to the systematic arrangement of our own species, as has long been applied to thousands of species of vegetables and animals. In the course of these introductory remarks they mention their examination of the Chinese inmates of the prison at Hong Kong. Among these they found persons belonging to the *Hakka* tribe, with stout and vigorous constitutions, fine well-shaped aquiline or long and straight noses, and a form of the eyes not resembling the specific obliquity of other Chinese. As criminals they had been deprived of their tails, and Drs. Scherzer and Schwarz affirm that they had such a resemblance to the figures of some Europeans of the lower class, that, by a change of dress, they might pass amongst us without being recognised.

They also mention how successfully Gützlaff, Medhurst and others have traversed the empire in a Chinese dress without detection. And, no doubt, there are individuals so capable of assuming, and, as it were, substituting the manners and expressions of others, that the ordinary and slight attention which is paid to persons on a journey and among numbers, does not suffice to discriminate them. Still *the rule* must run counter to such a confusion, or the statement of the Austrian voyagers could not be true—that an anthropologist of the island of Java is able, at first view, to classify most of the Malay tribes inhabiting the larger and smaller islands of the Indian Archipelago, without ever mistaking. And the very remarkable account of the Abbé Huc proves that, if there are differences among the races of men too subtle to be detected by the eye, yet they are not the less certainly appreciable. He informs us that he and his companion successfully eluded the detection of the unsuspecting or inattentive Chinese, but that to the Chinese *dogs* they always stood at once revealed as Europeans, by their peculiar smell. “The dogs barked continually at us, and appeared to know that we were foreigners.” This is not the proper time to refer to the distinguishable odours of the different races of mankind which travellers allude to. Huc said he could easily distinguish those of the Negro, the Malay, the Tartar, the Thibetan, the Hindoo, the Arab, and the Chinese. Indeed it is the same with those having a delicate sense of smell, as to the French and other European races. We have been informed, on the authority of one who has seen much of the North American Indians, that they describe an odour, to them peculiarly disgusting, as being attached to Jews; a statement but little accordant with the extravagant hypothesis, which would derive the Indians themselves from the Ten Tribes. And, with respect to the fact of the penetrating and offensive scent attached to men, more especially to civilised men, Mr. Galton and others who have traversed desert countries teeming with wild animals, give distinct and prominent testimony, which testimony is, in truth, not very complimentary to us.

Finally, it may be mentioned, that by a recent communication from Dr. Scherzer, we are informed that during the cruise of the *Novara*, about two hundred individuals of different races, but of about the same age, males and females, were subjected to measurement. The whole number of measures taken amount to nearly twelve thousand. Dr. Scherzer adds, that he does not consider these observations sufficient, but merely as the commencement of a system of thorough metrical examination;—that the paper on measurements has been trans-

lated into different languages, and copies of it left in the hands of physicians and other men of science in the different places and islands visited by the Expedition, who promised to complete the observations on the aborigines, and to forward the results to Europe;—that the measurement already effected embrace those made on Negroes, Malays, Mongols, Papuans, and Indians;—and that the greatest number were taken on individuals in the Nicobar Islands, Batavia, where natives of almost all the islands of the Indian Archipelago were met with, Manilla, Hong Kong, Sydney (Austral Negroes), New Zealand, Tahiti (where were aborigines of New Caledonia and Norfolk Island), Chili, and Peru. The results obtained by the extensive series of measurements thus procured will shortly be published to the world in the volumes now in preparation at Vienna. The history of the important voyage of the *Novara*, a popular illustrated work from the journals of the commanders, Commodore Wüllustorf and Dr. Scherzer, may be expected to be issued from the imperial printing-office, in German, to be followed by an English translation, in the early part of the year 1860. It is proposed that this shall be succeeded by a number of other volumes on distinct subjects. 1. Those on nautical, astronomical, meteorological, magnetical, and other observations relating to Physical Geography, by Commodore Wüllustorf; 2. Geology, by Dr. Hochstetter; 3. Zoology, by Herren Frauenfeld and Zelebor; 5. Ethnography, by Dr. Scherzer; 6. Statistics and Natural Economy by the same; 7. Medicine, (Pathological and Pharmacognostical Researches,) by Dr. Schwarz. And, lastly, 8. An Album selected from nearly 2,500 sketches made by Herr Sellery, the artist of the Expedition. Whenever this grand programme, which will have the best wishes of men of science in all countries, shall have been completed, the rich results of the first Austrian Circumnavigatory Expedition, placed, as it has been in able and well-instructed hands, will, we have no doubt, vindicate the national character in a new and much nobler field of enterprise, and give to that country a far more lasting and more dignified fame than any she has hitherto acquired.*

* Such is the inconvenience resulting from the use of a variety of meter-scales, and of such a number of methods of measurement, frequently taking quite different points for measures bearing the same name, as, in the case of the skull especially, that the celebrated Professor Von Baer, of St. Petersburg, has just now proposed a Congress of Anthropologists, to determine upon one uniform scale, and to establish one approved system. By this means all the results of measurements of the human body would be rendered of universal applicability. —*Nachrichten über die Ethnog. Craniol. Sammlung zu St. Petersburg*, s. 81.